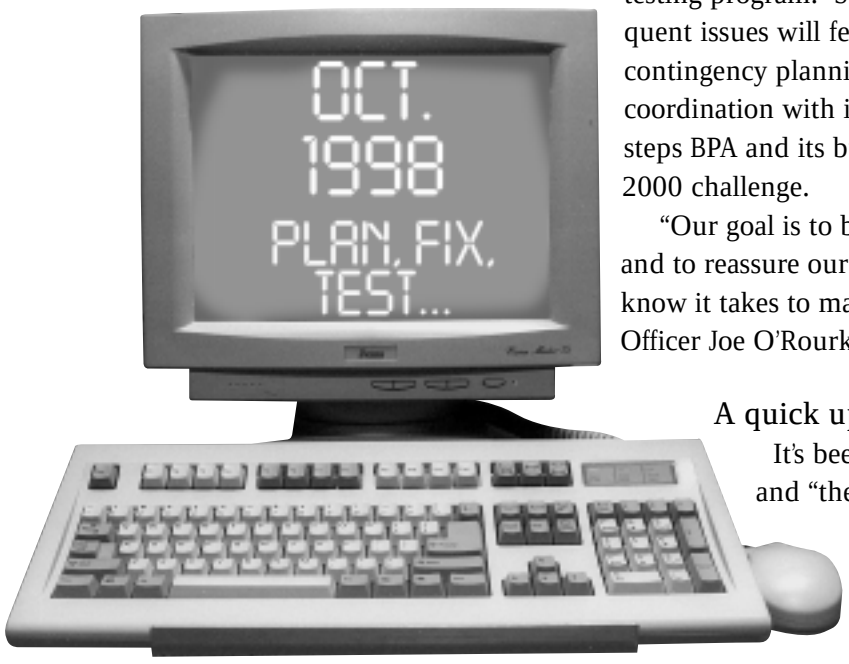
BPA AND Y2K

OCTOBER 1998

A quarterly status report for BPA customers, constituents, employees and the public on BPA's Year 2000 readiness

It's hard to pick up a newspaper these days without seeing something on computers and the Year 2000: congressional hearings, doomsday predictions, how to protect your financial investments. What's often missing is specifics on what business and industry are doing to prepare.

This newsletter aims to do that, and more. In addition to a progress report which will be in each issue, this first issue of *BPA and Y2K* looks more closely at BPA's equipment testing program. Subsequent issues will feature contingency planning, coordination with interconnected suppliers and utilities, and other steps BPA and its business partners are taking to prepare for the Year 2000 challenge.



"Our goal is to be methodical and thorough in our preparations and to reassure our many audiences that we are doing everything we know it takes to make this a non-event," says BPA Chief Information Officer Joe O'Rourke.

Want to know more about BPA and Y2K?

BPA's Y2K Readiness Program and Agency-Wide Plan is available on BPA's Web site. It lays out the project plan for BPA's Y2K testing, quality assurance, and contingency planning, among other elements. Go to *www.bpa.gov* and hit the Y2K Information button. BPA's Y2K Web site also includes links to other utility and government Web sites with more information on

A quick update in case you haven't heard....

It's been called variously "the millennium bug," "Y2K" and "the Year 2000 problem." The problem is that some computer software is programmed to recognize a "00" in the year field as "1900."

While airlines, telecommunications, and banking have gotten lots of attention on the Y2K front, electric utilities are arguably the underpinning of many of their operations. BPA is taking this issue seriously. On Jan. 1, 2000, BPA's goal, as it has always been, is to have a safe and reliable transmission system and power supply for homes, farms and businesses everywhere in the region.

BONNEVILLE POWER ADMINISTRATION

Progress Report: BPA's Y2K Readiness

(This status report will be updated and printed in every issue of BPA and Y2K.)

Milestones	Target	Status
Conduct inventory	August 1998	Completed July 1998
Develop Y2K testing guidelines	August 1998	Completed August 1998
Assess risk	September 1998	Initial risk assessment completed May 1997. Updated assessment will be complete October 1998.
Develop test plans	October 1998	Completed October 1998
Test components	January 1999	On schedule
Test systems and implement Y2K solutions (including re-testing)	March 1999	On schedule

Project scoping reveals much to accomplish

BPA's systematic approach to the Y2K readiness began with a thorough scoping of the problem. Beginning in late 1995, BPA conducted an inventory and analysis of its major systems. BPA identified systems critical to our operations, and began to plan for replacing, upgrading or discontinuing those with Y2K problems.

To get the work done, BPA appointed a cross-agency Y2K team with executive level sponsorship. The team laid out a five-point plan to prepare for Y2K:

1) Use a methodical process to find/fix Y2K problems;
2) Increase scrutiny on critical systems for transmission reliability;
3) Coordinate with entities that have significant effect on transmission;
4) Develop contingency plans for operating the transmission system; and
5) Develop comprehensive emergency plans.

Testing BPA's computer systems

Because the potential problem areas are so widespread and often difficult to predict, BPA's testing plan is methodical. The agency plan calls for every BPA computer system to be tested for at least two dates, Jan.1, 2000 and Feb. 29, 2000. (The Year 2000 is an uncommon leap year; see "Other dates that bear watching," on page 4.)

The plan calls for Y2K program leads to work with business line and system owners to develop milestones and project plans to review, test and update systems. A detailed tracking system will monitor progress, build in quality assurance and document need for timely and responsive problem-solving. BPA plans to complete the required testing and remediation by March 1999.

BPA has tested many of its business systems, including financial information and property management, and continues to update them to make them Y2K ready. BPA has also made changes to the Substation Control and Data Acquisition system, the equipment at our control centers which communicates with and controls transmission operations at 187 of our 363 substations. The SCADA at BPA's Munro control center was updated when the center was moved from Moses Lake to Spokane in 1996. BPA updated the SCADA at Dittmer

How do you do a Y2K test?

BPA adapted its Y2K testing guidelines from the nationally accepted CANUS/Utilities Services Alliance, Inc., standards. The guidelines call for several different tests. One typical test is to set the equipment's clock to 10 minutes ahead of Jan. 1, 2000, and let the computer run until it rolls over into the year 2000. If everything is working smoothly, the date should read Jan. 1, 2000. The equipment is then allowed to operate for a designated time, to observe any other anomalies that might occur as it continues to calculate and respond.

early in 1998.

Testing embedded microchips

Virtually every automated system today depends on equipment using embedded logic controls. Tiny microprocessors in the equipment are programmed to direct the equipment's operation. This programming often includes recognizing and responding to date and time data. In an electric transmission system, such programming might tell a relay to send electricity on a certain time schedule or to respond within a certain timeframe. Computers also use dates to sort and manage data, perform calculations and report information based on the date in the computer's log.

Of the more than 19,000 pieces of equipment involved in the operation of BPA's transmission and control system, nearly 2,400 use computers, software or embedded chips in their operation. The equipment falls into three broad categories:

1) system control equipment, including remote metering and protective relaying, which controls the movement of electricity across the grid;
2) communications equipment, including VHF radios, microwave and an internal telephone system that communicates among BPA control centers and major substations; and
3) automatic generation control, located in BPA's control centers, which matches generation with loads, and other systems that control BPA's substations.

Testing presents some interesting challenges. The equipment is located at remote sites throughout BPA's four-state service area and is in service 24 hours a day. Fortunately, BPA has units identical to those in the field at our testing and training facility. There, BPA's System and Protection Control engineers can run Y2K tests and see how the equipment will perform under various test conditions. And, they can test equipment without disrupting ongoing transmission system operations.

Manufacturers supply helpful information

BPA has discovered several Y2K problems simply by checking directly with the manufacturers. It's in manufacturers' best interests to know about their products' Y2K readiness, and BPA has made full use of this valuable information source.

For instance, BPA worked with the manufacturer of the internal telephone system at our Munro control center to fix a computer programming problem that would have happened on Dec. 31, 1998. BPA also has access to a database from the Electric Power Research Institute that tracks Y2K test findings for off-the-shelf equipment that electric utilities commonly use.

Some of BPA's transmission equipment, however, is unique.

Experts project electric system reliability on key Y2K dates

Those who've looked at the electric utility industry's Y2K readiness have positive things to say. This month in a special Y2K report to its business clients, the Kiplinger Washington Letter declared that the utility industry looks good. "Any disruptions will be brief," it said.

The North American Electric Reliability Council, after reviewing the Y2K preparations of more than 75 percent of the nation's electric utilities, agrees. In a preliminary report sent to the Department of Energy last month, NERC pointed out that electric utilities regularly meet peak demands during heat waves and restore service after thunderstorms. "Preparing for and dealing with operating risks is an ingrained part of the business," NERC said. NERC's report is on the Web at *www.nerc.com/y2k*.

Equipment used to help maintain stability on the transmission system and the high-voltage direct-current converter station at Celilio use computers to perform their functions. BPA is testing these units separately and coordinating directly with the appropriate manufacturers.

Other dates that bear watching

Part of BPA's methodical process for Y2K testing involves looking at several potential dates that may cause computer glitches. Jan. 1, 2000, unfortunately isn't the only date affected by Y2K. Here are some other priorities for BPA's Y2K testing:

Feb. 29, 2000

The year 2000 is what's referred to as "uncommon leap year." Years divisible by 100 are not leap years (1900 was not) unless they are divisible by 400 (2400 will be another leap year). Programmers who knew about the 100 rule, but not about the 400 rule, assumed 2000 was not a leap year.

Sept. 9, 1999

A common programming device was to enter 9999 as a signal that a stack of data had reached its end. This signal may sometimes have been programmed on date fields, with the result that the date 9/9/99 will have a special — and unintended — meaning in a program.

Jan. 1, 1999

One-year look-ahead date into next century: Many computer programs process data by looking forward one year and counting dates back from that point. If such systems have two-digit date problems that are not corrected in time, they may begin to malfunction or fail at the start of 1999.

Y2K a "non-event"

BPA's job is to provide a safe and reliable power supply no matter what the date or day of the year. We take that responsibility seriously. With thorough testing, remediation and contingency planning, our goal is to make Jan. 1, 2000 and other key Y2K dates like any other date…a "non-event" for the region's power system.

Information in *BPA and Y2K* is provided in line with the Year 2000 Information and Readiness Disclosure Act, which "…encourages the disclosure and exchange of information about computer processing problems, solutions, test practices and test results, and related matters in connection with the transition to the year 2000."

BPA and Y2K will be published quarterly. For additional copies or to add a name to the mailing list, please call BPA's Public Information Center, at 1-800-622-4519. Also, visit our Web site at *www.bpa.gov.*; there is a Y2K button on our home page.

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